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Hospitalizations for Behavioral Illness in Rhode Island

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The rates of utilization of hospital inpatient care for behavioral illness vary greatly with location within the United States, more so than is true for physical illness. The reasons for this variation are not fully understood, but among the hypotheses are differences in health coverage for behavioral health care, differences in the availability of providers for both inpatient and outpatient care, and differences in treatment-seeking patterns among those with behavioral health problems, as well as differences in underlying prevalence.

Although it is not possible to determine the relative contributions of these and other factors using hospital inpatient data alone, analysis of those data can be an informative first step in examining how the health care system responds to behavioral health issues. The authors have recently completed such an in-depth analysis [*Behavioral Health Hospitalizations, Rhode Island 2003* (in press)]; this report presents selected findings from that study.

Methods. Acute-care hospitals in Rhode Island report patient-level data for every inpatient discharged as required by licensure regulations. The data reported includes up to eleven diagnoses made during the inpatient stay, coded to the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM).[1] This analysis includes discharges with a principal or additional diagnosis of mental disorders, defined as ICD-9-CM diagnosis codes 290-319 for comparison to national and regional rates only. All other data includes discharges with a behavioral illness diagnosis defined according to the detailed diagnostic categories of the Clinical Classifications Software[2] (CCS) system, modified by the exclusion of two ICD-9-CM codes for tobacco use (305.1 and V15.82). To avoid double counting, discharges with both a principal and additional diagnosis of behavioral health are included only in the principal diagnosis group; thus there is no overlap between the two groups of discharges as defined for this analysis.

Rhode Island population-based rates were calculated using discharges of Rhode Island residents from Rhode Island and Massachusetts hospitals. Rates for the U.S. and Northeast region were taken from national publications.[3] (Note: The rate for the Northeast in 2001 was calculated by the authors from the published data.)

Results. In 2003, there were 12,726 inpatient discharges from non-Federal acute-care hospitals in Rhode Island with a behavioral illness principal diagnosis, representing 10.0% of all discharges (126,784 excluding hospital newborns) from these facilities. While accounting for 10% of patients, discharges with principal diagnoses of behavioral health conditions comprise 16.2% of the total days of care. There were an additional 23,844 discharges with diagnoses of behavioral illness secondary to a principal diagnosis of physical illness or injury. Together, the total of 36,570 discharges comprise 28.8% of all discharges.

Over half (56.7%) of discharges with a principal diagnosis of behavioral health are treated at one of the six acute-care general hospitals offering behavioral health services. (Figure 1) The two psychiatric hospitals also provide a large proportion (39.7%) of the care to these patients. Only a small proportion (3.6%) of discharges with a principal diagnosis of behavioral health are seen at acute-care general hospitals without behavioral health services. Among acute-care general hospitals with behavioral health services, the proportion of discharges with any behavioral health diagnosis falls in the range 24%-46% compared to 8%-29% for hospitals without these services.

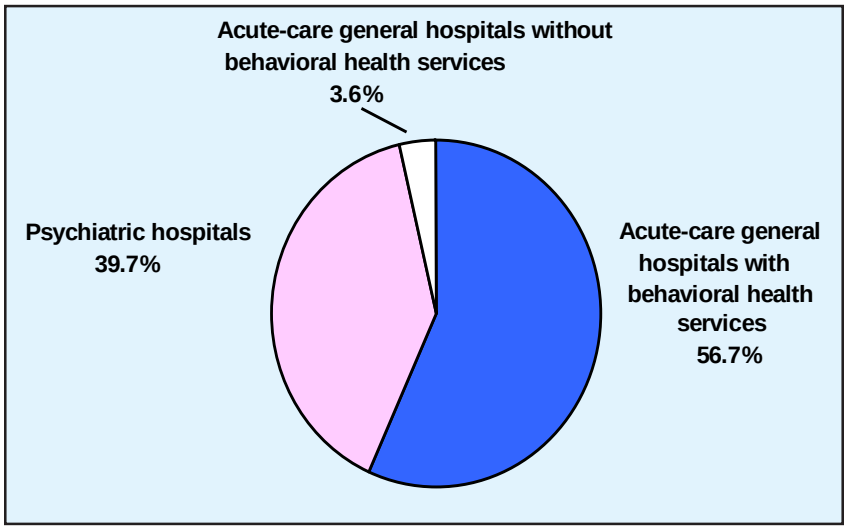

Figure 1. *Hospital discharges with principal diagnosis of behavioral illness, by hospital type, Rhode Island, 2003*

Over 2000-2002, the rate of discharges per 10,000 with a principal diagnosis of mental disorders increased in both Rhode Island and the U.S.[3,4] (Figure 2) Rates for Rhode Island were substantially higher than for the U.S but lower than rates for the Northeast. In 2003, the Rhode Island rate, 109.9 per 10,000 population, was 38.8% higher than the national rate (79.2), but 14.7% lower than the rate for the region (128.8).

The most common expected source of payment for patients with a principal diagnosis of behavioral illness is private insurance, including Blue Cross, commercial plans and CHAMPUS,

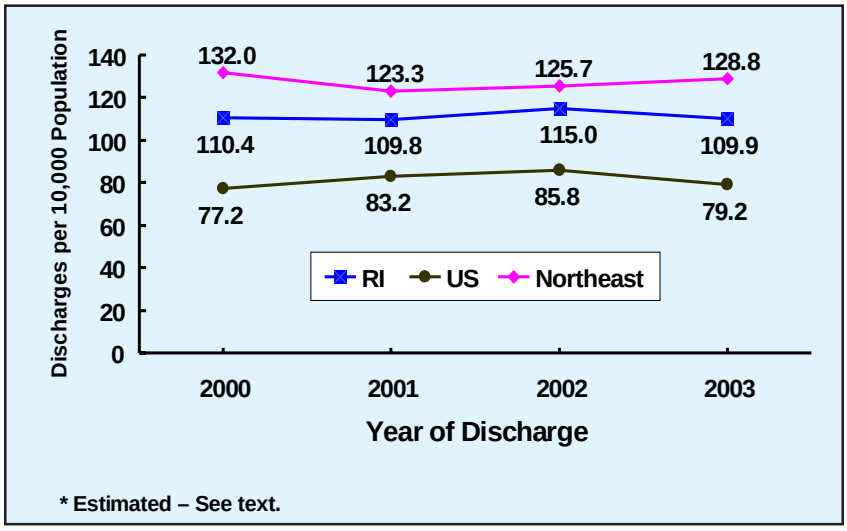

Figure 2. Discharges per 10,000 population for principal diagnosis of mental disorders, Rhode Island, Northeast and United States, 2000-2003

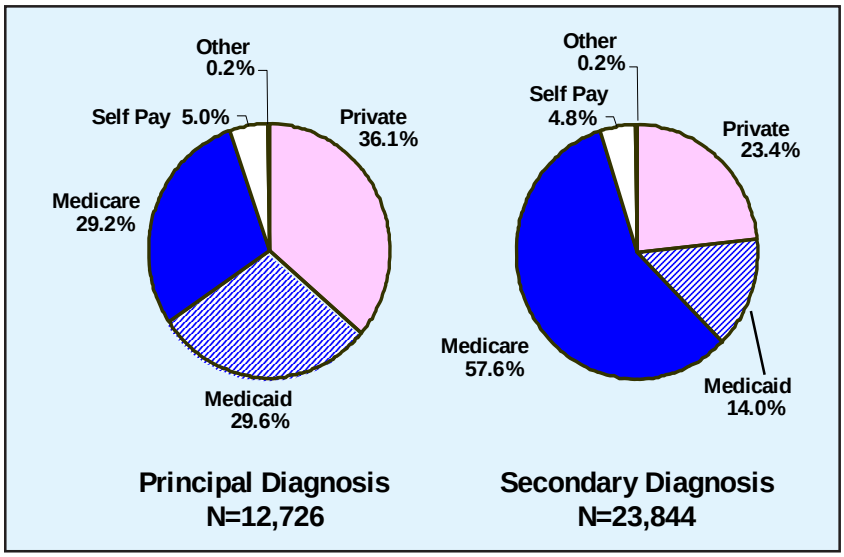

Figure 3. Hospital discharges with behavioral illness diagnosis, by expected source of payment and position of diagnosis, Rhode Island, 2003

comprising 36.1% of these discharges. (Figure 3) Medicaid (including RIte Care) and Medicare also account for large proportions of these discharges with 29.6% and 29.2%, respectively. Self-pay patients, presumably uninsured, comprise 5.0% of discharges with a principal diagnosis of behavioral health, higher than the self-pay rate for all discharges (3.2%).

Examination of the expected source of payment for patients where the diagnosis of behavioral illness is only secondary to a principal diagnosis of physical illness or injury shows that Medicare accounts for more than half of these discharges (57.6%), followed by private insurance with 23.4%. (Figure 3) For comparison, among all discharges in 2003 Medicare accounts for 45.2%, Medicaid 15.6% and private insurance 35.4%.

Among patients with a principal diagnosis of behavioral illness, the average length of stay is higher than for all discharges (8.8 days vs. 5.4 days), and the average total charge per discharge is lower ($13,073 vs.$17,576). Within the group of patients with a behavioral health principal diagnosis, affective disorders is the most commonly reported diagnostic category, followed by substance-related mental disorders, other mental disorders and alcohol-related disorders. (Table 1) The longest lengths of stay and highest average charges occur in the diagnostic categories of anxiety, somatoform, disassociative, and personality disorders (14.6 days, $19,368) and schizophrenia and related disorders (13.8 days, $21,645). Alcohol- and substance-related mental disorders have the shortest average lengths of stay (4.3 days and 4.8 days, respectively) and lowest average charges ($7,102 and $7,167).

Discussion. At hospitals in Rhode Island, patients with behavioral illness diagnoses comprise 29% of total inpatient discharges and 36% of total inpatient days of care. The large majority of these

Table 1.
Number of discharges, average length of stay and average charge per discharge for discharges with a behavioral illness principal diagnosis, by diagnostic category, Rhode Island, 2003

Diagnostic Category	Behavioral Illness Principal Diagnosis		
	Number of Discharges	Average Length of Stay (Days)	Average Charge per Discharge
Mental retardation	4	*	*
Alcohol-related mental disorders	1,294	4.3	$7,102
Substance-related mental disorders	1,530	4.8	$7,167
Senility and organic mental disorders	1,048	11.6	$19,164
Affective disorders	5,227	9.1	$13,313
Schizophrenia and related disorders	1,129	13.8	$21,645
Other psychosis	387	8.2	$12,860
Anxiety, somatoform, disassociative, and personality disorders	625	14.6	$19,368
Preadult disorders	91	11.8	$17,081
Other mental conditions	1,390	7.5	$9,636
Personal history of mental disorder, mental and behavioral problems, observation and screening for mental condition	1	*	*
Total	12,276	8.8	$13,073

*Data suppressed due to small number of observations.

patients, including nearly all those who have a behavioral illness diagnosis secondary to a principal diagnosis of physical illness or injury, are treated at acute-care general hospitals.

These findings identify an issue for further explication - the provision of behavioral health services in acute-care general inpatient settings. The sheer volume of cases and the frequent existence of serious co-morbidity together form a potential challenge for our state's healthcare system, particularly to ensure adequate behavioral healthcare providers, available services and continuity of care for these patients.

Another question is raised by the finding that the distribution of the expected source of payment for patients with a behavioral health diagnosis differs from the distribution seen for all discharges. This result may reflect differing access to care across payers. This possibility also deserves further analysis, perhaps involving health plan data on behavioral health care in outpatient settings as well as inpatient care.

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2 *Clinical Classifications Software (ICD-9-CM) Summary and Download*. Summary and Downloading Information. July 2003. Agency for Health Care Policy and Research, Rockville, MD. http://www.ahrq.gov/data/hcup/ccs.htm

3 DeFrances CJ, Hall MJ, Podgornik MN. 2003 National Hospital Discharge Survey. *Advance Data From Vital and Health Statistics*; No. 359. Hyattsville, Maryland: National Center for Health Statistics, 2005. http://www.cdc.gov/nchs/data/ad/ad359.pdf and previous reports in the series.

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